International Journal of Business Marketing and Management (IJBMM)
Volume 2 Issue 6 July 2017, P.P.27-30
ISSN: 2456-4559
www.ijbmm.com

Enhancing Technology Absorption Capability in Vietnam's Agro - Processing Enterprises

Trịnh Minh Tâm[1], PhD; Nguyễn Hữu Xuyên[2], PhD
[1] *Deputy Director General, Vietnam Centre for Science and Technology Evaluation (VISTEC) .*
Email: tmtam@most.gov.vn
[2] *Deputy Director General, National Institute of Patent and Technology Exploitation (NIPTEX) .*
Email: nhxuyen@most.gov.vn

Abstract: *Technology absorption capability is an important factor affecting the productivity and competitive advantage of enterprises. The theories and experiences of many countries in the world show that, in order to develop a technology-based economy, it is necessary to determine the current status of technology absorption capability at the enterprise, sector and national level. This article clarifies the current status of technology absorption capability in agro-processing enterprises, recommending solutions to improve the technology absorption capability of agro-processing enterprises with the conditions of Vietnam*

Keywords: *Technology absorption capability*; *agro-processing enterprise*

I. Overview of research on technology absorption capability

Technology absorption capability is one of the indicators that reflect technological capability (Lall S, 1992). Technology capability is a concept that is used in practice but without high consistency. According to James (1988), technological capability is the ability to use technology effectively, manifested in technology selection, process implementation, and product creation that is highly competitive. At the enterprise, the World Bank (2010) argues that technological competence demonstrates the ability to work toward developing a specific product and allowing selection, using technology to create an edge, competitiveness, technology capability including production capacity, investment capacity and innovation capacity. At the industry level, Ramanatham (1995) emphasizes the ability to create new products, new processes that create a premise for superior competitiveness, and synthesize and divide technology capabilities into four groups, it is the purchasing power, operating capacity, supporting capacity and creative capacity.

Technology absorption capability is one of the important factors contributing to the process of adaptation, assimilation, technology ownership and endogenous capacity building on national technology (Nguyen Huu Xuyen, 2015). In order to characterize the components of technology capability, Fransman (1986) made up the following components: technology search capability, appropriate technology selection capability, technology ownership capability import, technology improvement capabilities in specific circumstances, research and development capabilities to create useful solutions and basic research capabilities to upgrade technology.

At the development level, technology absorption capability is the lowest level of technology capability (OECD, 1995), which can divide technology capability into three levels from low to high: Technology absorption capability; Technology innovation capability; Technology creation capability. Accordingly, technology absorption capability is reflected in technology adoption through technology transfer. Technology absorption capability include: capacity to search, evaluate and select appropriate technology, ability to choose learning mode, absorb technology; price negotiation and technology transfer contracts (UN - ESCAP, 1989).

II. Current status of technology absorption capability in Vietnamese agro-processing enterprises

Vietnam is a developing country; the technology used in most enterprises is received from abroad through technology transfer. According to the General Statistics Office (2016), Vietnam has about 500,000 active enterprises, with over 98% of SMEs being in both capital and labor. Of which, there are about 6,610 enterprises operating in the field of processing agricultural products, focusing on 12 major commodities (Table 1): rice processing has 582 enterprises, accounting for 8.8% of the total number of enterprises; coffee processing has 239 enterprises (3.6%); rubber processing has 147 enterprises (2.2%); tea processing has 257 enterprises (3.9%);

cashew processing has 328 enterprises (5.0%); sugarcane processing has 38 enterprises (0.57%); fruit and vegetable processing has 145 enterprises (2.2%); pepper: 17 enterprises (0.3%); meat processing: 51 enterprises (0.8%); seafood processing has 864 enterprises (13.1%); processing animal feed has 338 enterprises (5.1%) and wood processing enterprises has 3,604 enterprises (54.5%).

Table 1: Number of enterprises processing agricultural products by product category

No	Agro - processing by product category	Number of enterprises	
		Total	**%**
1	Rice	582	8,80
2	Coffee	239	3,62
3	Rubber	147	2,22
4	Tea	257	3,89
5	Cashew	328	4,96
6	Sugar	38	0,57
7	Vegetables	145	2,19
8	Pepper	17	0,26
9	Animal feed	338	5,11
10	Meat processing	51	0,77
11	Seafood processing	864	13,07
12	Wood processing	3.604	54,52
	Total	**6.610**	**100,00**

Source: National Institute of Agricultural Planning and Projection (2013)

In fact, agro-processing enterprises have made great contributions to the growth of Vietnam's agricultural sector. In the period 2011-2016, our agriculture has achieved remarkable achievements. In 2016, GDP growth rate of the whole sector will be about 1.2%; Production value increased 1.44%. In the export activities, in 2014, total export turnover of agriculture, forestry and fishery of Vietnam reached over $ 30 billion, an increase of 11.2% over 2013, of which many items have increased export turnover, as 32% for coffee, 5.3% for rice. There are 10 export items with a turnover of more than US $ 1 billion (Hoang Minh Duc, 2015). According to the World Trade Center (2014), Vietnam's coffee, tea and spices account for 9.01% of market share, 7.83% of rice and 4.17% of world market. However, among the export items, only seafood products are exported by processing, the rest are exported in the form of raw products, low value. In addition to the achievements, the agro-processing enterprises in Vietnam have some limitations such as: low added value of the sector and not sustainable development; competitiveness of some agricultural products is not high; the market is unstable, not food safety; the proportion of high technology is still modest, mainly for export of raw products, not yet forming the value chain of agricultural products; the income of farmers is low.

The cause of the above-mentioned shortcomings is the low technology absorption capability of enterprises in the agricultural processing industry. Enterprises are not really active in the search, evaluation and selection of technology to serve production and processing activities, so the product quality is not high. In particular, the selection of appropriate learning and learning methods is not appropriate; Capacity of negotiating prices and making transfer contracts is still inadequate. Therefore, there is a great influence on the acquisition of technology.

Therefore, the technology absorption capability of Vietnamese agro-processing enterprises is one of the barriers in improving product quality and competitive position of enterprises. In recent years, research and technological innovation activities in agro-processing enterprises are still limited, the most visible is the level of investment /turnover for technology renovation activities. Moreover, the level of technology used in processing agricultural products is backward, small processing scale, high losses after harvest; support policies that promote the absorption of technology have not been as effective as expected. Hence, enhancing the technology absorption capability to be able to participate in the global supply chain is essential, thereby contributing to the value and contribution of agro-processing enterprises to socio – economic development of Vietnam.

III. Suggest solutions to improve the technology absorption capability in the agro - processing enterprises in Vietnam

In order to contribute to the implementation of cleaner production, cleaner and higher quality agricultural products, and more competitive prices for export markets, Vietnam should step by step promote agro-processing enterprises, improve the technology absorption capability through the search, evaluation and

selection of appropriate technology, thereby gradually improving, copying and creating new products and processes. To do this, in the coming time Vietnam should:

Firstly, creating a legal corridor for enterprises to evaluate and select technologies for agricultural product processing and export. Continue reviewing and finalizing policies on credit, taxation and land to promote enterprises to host and own technology, especially to directly support agricultural product processing enterprises to improve their research capacity through the establishment of research and development departments at the enterprise. Through this, enterprises can create inventions, useful solutions and technological solutions, which are the basis for the formation of new products and processes through the application of research results into produce.

Second, promote linkages between processors, exporters, farmers and trade organizations to bring good quality, fast-moving agricultural products to the market; at the same time, strengthening the coordination mechanism between state management agencies from central to local levels and agricultural product processing enterprises in the activities of seeking, selecting and renovating technologies. Thereby, it stimulates agro-processing enterprises to have the motivation to improve their technologies, step by step raise their technology absorption capacity and take initiative in applying environmentally friendly and safe production processes, promoting cohesion between processing enterprises and raw material areas is a prerequisite for creating high quality products accepted by the society and the market.

Thirdly, continue to support agro-processing enterprises in selecting the form of learning and receiving technology to be transferred, supporting enterprises to make and negotiate technology transfer contracts through training courses. Moreover, in order to improve the technology absorption capability, state management agencies need to listen to the ideas of processing enterprises, seafood processing and exporting associations and agricultural associations, this reference is valuable in planning, organizing the implementation of development policies of agro-processing enterprises.

Fourthly, the State should develop criteria to control the operation of agro-processing enterprises in accordance with the promulgated standards; at the same time, sanctions should be imposed on enterprises using outdated technologies which affect the environment. It is necessary to accelerate the construction of technology centers from the central to local levels, technology incubators, and the provision of technology supplies to facilitate the processing of technology innovations by agro-processing enterprises.

In addition, it is necessary to complete the technological infrastructure for the agricultural product processing industry, step by step reduce post-harvest losses, and concentrate investment on the development of processing industry on a large scale, enterprises to create value chains in the field of processing agricultural products.

References

[1.] Ministry of Agriculture and Rural Development (2014), *Draft proposal on increasing the value added of agricultural, forestry and fishery products*, Hanoi

[2.] *Decree No. 41/2010 / ND-CP on credit policies for agricultural and rural development,* Vietnam

[3.] Nguyen Manh Dung (2014), *Agricultural product processing enterprises in the restructuring of the agricultural sector*, Vietnam.

[4.] Hoang Minh Duc (2015), *Agricultural restructuring in the current context: international experience and lessons learned for Vietnam*, Vietnam.

[5.] Fransman (1986), *A new approach to the study of technological capability in less development countries.*

[6.] Lall S (1992), *Technological Capabilities and Industrialization*, World Development, Vol. 20, No. 2, pp. 165-186, Printed in Great Britain.

[7.] James (1988), *The impact of technology imports on indigenous technology capality*.

[8.] Ramanatham (1995), *Technology capabilities of transferors and transferes*, Lecture notes of technology transfer, AIT.

[9.] *Decision No. 899 / QĐ-TTg approving the project of restructuring agricultural sector towards value added and sustainable development,* Vietnam.

[10.] *Decision No. 124 / QĐ-TTg on master plan for agricultural production development up to 2020 and vision to 2030,* Vietnam.

[11.] Trinh Minh Tâm (2015), *The Role of FDI in Technological Innovation in Vietnamese Enterprises,* Vietnam Trade and Industry Review, No. 6, May 2015, p18-21.

[12.] Trinh Minh Tâm (2015), *Technology Absorption through Foreign Direct Investment in Vietnam: State and Enterprise Conditions,* Vietnam Science and Technology, No. 8.2015 (677) p 51-54.

[13.] Trinh Minh Tâm et al. (2016), *Spillover effects of FDI on technology innovation of Vietnamese enterprises*, Journal of Economics & Development, 224 (II), February 2016, p 2- 9.
[14.] Nguyen Huu Xuyen (2014), *Science policy and technological innovation*, National Economics University Publishing House, Vietnam.
[15.] Nguyen Huu Xuyen and Do Thi Hai Ha (2015), *Enhance technological capacity in Vietnam's fruit and vegetable processing enterprises*, NEU and Pan-Pacific Conference XXXII, Publication of the Pan-Pacific Bussiness Association.
[16.] OECD (1995), Oslo Manual 1995, Paris, France.
[17.] World Bank (2010), *Inovation Policy: A guide for Developing Countries*, Wasington, D.C.
[18.] UN-ESCAP (1989): "*Technology Atlas Project Tokyo Program on Technology for Development in Asie and Pacific*", Bangalore, India.